

STATE OF HAWAII

TITLE 12 DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

SUBTITLE 8 DIVISION OF OCCUPATIONAL SAFETY AND HEALTH

CHAPTER 225

PRESSURE SYSTEMS

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Historical Note: Chapter 225 of Title 12 is based upon chapter 377 of the Hawaii Occupational Safety and Health Standards, Rules and Regulations. [Eff. 7/11/74; am 12/30/76; am 8/1/78; R 12/6/82]

§12-225-1 Definitions. As used in this chapter:

"Authorized inspector" means a person authorized by the ASME Code to inspect and stamp piping systems.

"Boiler external piping" means that piping from the beginning of the well head to the throttle valve and includes pipe, flanges, bolting, gaskets, valves, relief devices, fittings, and the pressure-containing portions of other piping components.

"Certificate of authorization" means a certificate of the pressure vessel system which has been fabricated in accordance with this chapter.

"Pressure system" means all unfired pressure vessels and pressure pipe components of any closed liquid or vapor distribution system operating at a pressure of more than 15 PSIG or a temperature in excess of 250 ° F (121.1° C), or both, and obtaining its heat from a source other than the combustion of gaseous, liquid or solid fuels, electricity, or nuclear sources, or obtaining its pressure from a pump, compressor, or other pressure producing device which has a N.P.S. diameter in excess of 1/2 inch. [Eff. 8/5/88; comp 12/6/90] (Auth: HRS §397-4) (Imp: HRS §397-4)

§12-225-2 Geothermal energy systems. (a) Geothermal energy systems operating at a pressure of more than 15 PSI are subject to the provisions of this chapter. They shall be designed and erected in accordance with all applicable requirements for design, materials, fabrication, erection, test, and inspection of power piping systems included in the ANSI/ASME B31.1.

(b) Boiler external piping as defined in section 12-225-1 shall be provided with data reports, inspection, and stamping as required by Section I of the ASME Code. The quality control system requirements of Section I of the ASME Code shall apply. All other piping shall meet the requirements of ANSI/ASME B31.1 1989 and be provided with data reports by an authorized inspector.

(c) Piping for which inspection and stamping is required as determined in accordance with subsection (b) shall be inspected during construction and after completion and, at the opinion of the authorized inspector, at such stages of the work as he may designate. Each assembler or erector is required to arrange for the services of authorized inspectors as defined in Section I PG-91 of the ASME Code.

- (1) Certification by stamping and data reports, where required, shall be as per Section I Part PG Rules 104, 105, and 109 through 112 of the ASME Code.
- (2) All data reports shall be filed with the department's chief boiler inspector.
- (3) All pressure vessels forming a part of a geothermal energy system shall be fabricated in accordance with the provisions of Section I or Section VIII Division 1 or Division 2, as applicable, of the ASME Code by a manufacturer who is in possession of the appropriate symbol stamp, a valid certificate of authorization, and National Board registered.
- (4) When pressure vessels having a manhole opening form part of a geothermal pressure system, the piping-up stream from the pressure vessel shall be fitted with two stop valves having an ample free-blow drain between them. In determining the existence of two stop valves, the well head stop valve shall not be counted.
- (5) When multiple geothermal wells supply the same pressure system, all pressure vessels having a manhole opening shall be fitted on both the up stream side and the down stream side with two stop valves having an ample free-blow drain between them.
- (6) Plans and material specifications for geothermal energy systems within the scope of this code shall be submitted to the department's chief boiler inspector, prior to commencement of work, for review. [Eff. 8/5/88; am and comp 12/6/90] (Auth: HRS §397-4) (Imp: HRS §397-4)

§12-225-3 Overpressure protection. (a) All pressure vessels within the scope of this chapter which can be isolated under pressure, irrespective of size or pressure, shall be provided with protective devices of sufficient pressure relieving capacity that shall prevent the pressure from rising more than 10 per cent or 3 PSI, whichever is greater, above the maximum allowable working pressure of the vessel or system; except when multiple pressure

relieving devices are provided and set in accordance with Section VIII, Division 1 Part UG Rule 134(a) of the ASME Code, they shall prevent the pressure from rising more than 16 per cent or 4 PSI, whichever is greater, above the maximum allowable working pressure of the vessel or system.

(b) Nonreclosing pressure-relief devices of the rupture disk type, fabricated, marked, and installed in accordance with Section VIII Division 1 of the ASME Code, shall be used to meet the requirements of this chapter. A full-area stop valve may be installed between the vessel and the nonreclosing pressure relief device for repair purposes only provided the installation is in accordance with Section VIII Division 1 Part UG Rule 135 and appendix M of the ASME Code. [Eff. 8/5/88; am and comp 12/6/90] (Auth: HRS §396-4) (Imp: HRS §397-4)

§12-225-4 Air conditioning and refrigeration systems. Air conditioning and refrigeration systems of the vapor compression type are not subject to the conditions of this chapter, except that all pressure vessels used in these systems shall be fabricated in accordance with the provisions of Section VIII Division 1 or Division 2, as applicable, of the ASME Code by a manufacturer who is in possession of the appropriate code symbol stamp and a valid certificate of authorization, and in accordance with ANSI/ASHRAE Standard 1.5-1989, Safety Code for Mechanical Refrigeration. [Eff. 8/5/88; am and comp 12/6/90] (Auth: HRS §397-4) (Imp: HRS §397-4)